

Humidity + Temperature Controllers

MONOGRAM

iSeries



\$390
Monitor
\$490
with 2 control outputs



- ✓ Dual Loop Control
- ✓ Humidity + Temperature
- ✓ High Accuracy $\pm 0.5^{\circ}\text{C}$ and $\pm 2\%$ RH
- ✓ 4 Popular DIN Sizes
- ✓ Ethernet and Serial Communications (optional)
- ✓ 2 Control or Alarm Outputs (optional)
- ✓ Choice of Relays, SSR, DC Pulse, Analog Voltage and Current
- ✓ RH/Temperature Probe included
- ✓ Full Autotune PID Control
- ✓ Programmable Ramp and Soak for Humidity and/or Temperature
- ✓ NEMA-4, IP65 Front Bezel

The **OMEGA® iTH Series** instruments monitor and control both temperature and relative humidity.

All meters and controllers in the series are high quality, highly accurate instruments featuring Omega's award-winning **iSeries** technology, uncompromising accuracy, and Made in the U.S.A. quality, backed by an extended 5-year warranty.

The instruments are simple to configure and use, while providing tremendous versatility and a wealth of powerful features.

The **OMEGA iTH Series** instruments are available either as monitors or controllers. The monitors are extremely accurate programmable digital panel meters displaying humidity, temperature, or dew point. The controllers also provide dual loop control for both humidity and temperature and are easily programmed for any control or alarming requirement from simple on-off to full autotune PID control.

The **iTH** family of meters and controllers are available in four true DIN Sizes with NEMA 4, IP65 splash resistant bezels: the ultra compact 1/32 DIN (the world's smallest dual loop Humidity + Temperature controller); the popular midsize 1/16 DIN square bezel with dual display; the 1/8 DIN vertical, and the 1/8 DIN horizontal with the big bright 21mm digits.

The **OMEGA iTH Series** LED displays can be programmed to change color between Green, Amber, and Red at any set point or alarm point.

The **iTH** controller models offer a choice of two control or alarm outputs in almost any combination: solid state relays (SSR); Form "C" SPDT (Single Pole Double Throw) relays; pulsed 10 Vdc output for use with an external SSR; or Analog Output selectable for control or retransmission of the process value.

The Networking and Communications options (highly recommended) include direct Ethernet LAN connectivity with an Embedded Web Server, and serial communications. The C24 serial communications option includes both RS-232 and RS-485. Protocols include both MODBUS and a straightforward ASCII protocol. The C4E1 option includes both Ethernet and RS-485 ASCII/MODBUS on one device.

The **iTH Series** meters and controllers are designed for easy integration with popular industrial automation, data acquisition and control programs as well as Microsoft Visual Basic and Excel. **OMEGA®** provides free configuration and data acquisition software and demos which makes it fast and easy to get up and running with many applications.

SPECIFICATIONS

Control

Action: Reverse (heat) or direct (cool)
Modes: Time and Amplitude Proportional Control Modes; selectable Manual or Auto PID, Proportional, Proportional with Integral, Proportional with Derivative with Anti-reset Windup and ON/OFF
Rate: 0 to 399.9 seconds
Reset: 0 to 3999 seconds
Cycle Time: 1 to 199 seconds; set to 0 for ON/OFF operation
Gain: 0.5 to 100% of span; Setpoints 1 or 2
Damping: 0000 to 0008
Soak: 00.00 to 99.59 (HH:MM), or OFF
Ramp to Setpoint: 00.00 to 99.59 (HH:MM), or OFF
Auto Tune: Operator initiated from front panel for one input at a time only

Control Output 1 & 2

Relay: 250Vac or 30Vdc @ 3A (resistive load); configurable for on/off, PID, Ramp and Soak
Output 1: SPDT type, can be configured as Alarm 1 output. **Output 2:** SPDT type, can be configured as Alarm 2 output

SSR: 20-265Vac @ 0.05 - 0.5A (resistive load); continuous

DC Pulse: Non-Isolated; 10 Vdc @ 20 mA
Analog Output (Output 1 only): Non-Isolated, Proportional 0 to 10Vdc or 0 to 20mA; 500Ω max

Alarm 1 & 2 (programmable)

Type: Same as Output 1 and 2

Operation: High/low, above/below, band, latch/unlatch, normally open/normally closed and process/deviation; front panel configurations

Analog Output (programmable): Non-Isolated, Retransmission 0 to 10Vdc or 0 to 20mA, 500Ω max (Output 1 only). Accuracy is ± 1% of FS when following conditions are satisfied.

- 1) Input is not scaled below 1% of Input FS.
- 2) Analog Out is not scaled below 3% of Output FS.

Sensor Specifications

Relative Humidity Accuracy/Range:

±2% for 10 to 90% RH
 ±3% for 0 to 10% RH and 90 to 100% RH

Hysteresis: ±1% RH; **Non-Linearity:** ±3%

Temperature Accuracy/Range*:

±0.5°C (±1°F) for 0 to 80°C (32 to 176°F)
 ±1°C (±2°F) for -40 to 0°C and 80 to 124°C

(-40 to 32°F and 176 to 254°F)

Resolution: 0.03%, 12 bit for RH;

0.01°C, 14 bit for Temperature

Response Time: 4 sec for RH; 5 sec for Temp

(63% slowly moving air)

*Note: extended temperature range is for Probe only, the unit's operating temperature is 0-50°C

Network and Serial Communications

Supported Protocols: TCP/IP, ARP, HTTPGET

RS-232/RS-422/RS-485: selectable from menu; both ASCII and Modbus protocol selectable from menu. Programmable 300 to 19.2 K baud; complete programmable setup capability; program to transmit current display, alarm status, min/max, actual measured input value and status

RS-485: Addressable from 0 to 199

Ethernet: Standards Compliance

IEEE 802.3 10Base-T

Connection: Screw terminals

General

A/D Conversion: 12 bit RH and 14 bit Temp.

Reading Rate: 2 samples per second max.

Digital Filter: Programmable

Display: 4-digit, 9-segment LED

• 10.2 mm (0.40") : i32, i16D, i8DV

• 10.2 mm (0.40") & 21 mm (0.83") : i8DH

red, green and amber programmable colors

Operating Temperature:

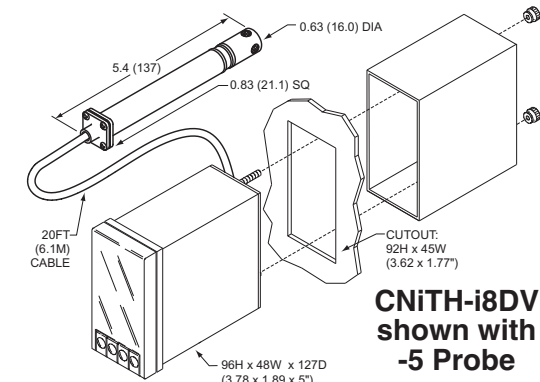
0 to 50°C (32 to 122°F), 90% RH non-condensing

Power: Refer to ordering guide below.

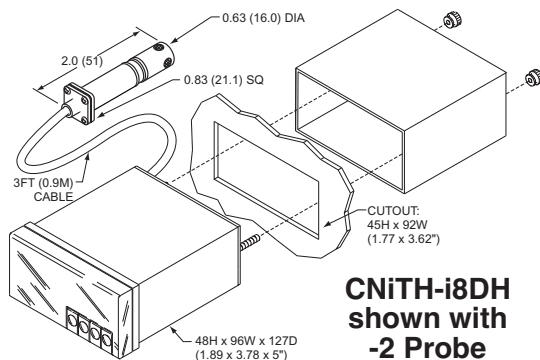
No CE compliance above 60 Hz

Units can be powered safely with 24Vac power, but no certification for CE/UL are claimed

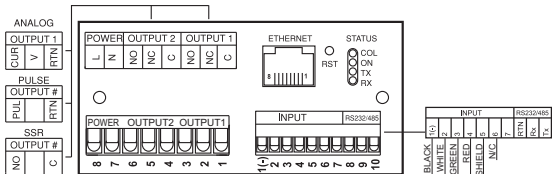
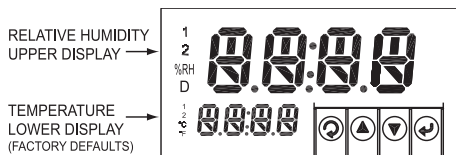
For other General Specifications, refer to the iSeries Common Specs page.



CNiTH-i8DV shown with -5 Probe



CNiTH-i8DH shown with -2 Probe



For other mechanical drawings refer to the iSeries Temperature/Process Controller pages. Dimensions shown in inches (mm)

To Order (*Specify Model No.)

Model No.	DESCRIPTION	Price
DPiTH- (****)	Monitor version, no control outputs	\$390
CNiTH- (****) (**)	Controller version, select 2 control outputs	\$490
i8DH	Temperature and RH Input 1/8 DIN Dual Display Horizontal	
i8DV	Temperature and RH Input 1/8 DIN Dual Display Vertical	
i16D	Temperature and RH Input 1/16 DIN Dual Display	
i32	Temperature and RH Input 1/32 DIN Single Display *2	

CONTROL OUTPUTS		
2 2	Two solid state relays (SSR's): 0.5 A @ 120/240 Vac continuous	
2 3	SSR and relay: Form "C" SPDT 3A @ 120Vac, 3A @ 240Vac	
2 4	SSR and pulsed 10 Vdc @ 20 mA (for use with external SSR)	
3 3	2 Relays: Form "C" SPDT 3 A @ 120 Vac, 3 A @ 240 Vac	
4 2	Pulsed 10 Vdc @ 20 mA (for use with external SSR) and SSR	
4 3	Pulsed 10 Vdc @ 20 mA (for use with external SSR) and relay	
4 4	Two pulsed 10 Vdc @ 20 mA (for use with external SSR)	
5 2	Analog Output selectable as either control or retransmission of process value; 0 to 10 Vdc or 0-20 mA @ 500 ohm max. & SSR	
5 3	Analog Output 0 to 10 Vdc or 0-20 mA @ 500 ohm max & Relay	
5 4	Analog Out 0 to 10Vdc or 0-20mA @ 500 ohm max & Pulse 10V	
	-AL Limit Alarm Version (Simplified Menu; No PID Control) *1	N/C

RH/TEMPERATURE PROBE (must select one)		
-2	2" (51mm) Probe for iTH with 3ft (0.9m) cable	N/C
-5	5" (137mm) Probe for iTH with 20ft (6.1m) cable	N/C

POWER SUPPLY		
*	Standard power input: 90-240 Vac ±10%, 50-400 Hz, 110-375 Vdc, equivalent voltage (*no entry required)	N/C
-DC	Low Voltage Power Option: 12 - 36 Vdc; 24 Vac ±10%	\$25

NETWORK OPTIONS		
-EI	Ethernet with Embedded Web Server	\$55
-C24	Isolated RS-232 and RS-485/422. 300 to 19.2k Baud	\$60
-C4EI	Ethernet with Embedded Web Server + Isolated RS-485/422 hub for up to 31 devices	\$115

SOFTWARE (Requires Network Option)		
OPC-SERVER LICENSE	OPC Server/Driver Software License	\$295

*1 Analog Output (Option 5) is not available with -AL units.

*2 -C4EI or -EI option is not available on the 1/32 DIN. Refer to the iServer section for other Ethernet devices that can connect to an CNiTH-i32xx-x-C24 .

ORDERING EXAMPLES:

CNiTH-i8DH43-5-C4EI is a horizontal 1/8 DIN Dual display with pulse and relay outputs, a 5" probe and Ethernet with Embedded Web Server \$490 + 115 = \$605

DPiTH-i16D-2-EI is a 1/16 DIN Dual display with a 2" probe and Ethernet with Embedded Web Server \$390 + 55 = \$445